Volunteer Lake Assessment Program Individual Lake Reports
FROST POND, JAFFREY, NH

MORPHOMETRIC DATA

Watershed Area (Ac.):	314	Max. Depth (m):	3.7	Flushing Rate (yr¹)	0.8			
Surface Area (Ac.):	103	Mean Depth (m):	2.1	P Retention Coef:	0.84			
Shore Length (m):	3,100	Volume (m³):	889,500	Elevation (ft):	1095			

TROPHIC CLASSIFICATION

| Year	Trophic class
1980	MESOTROPHIC
2001	MESOTROPHIC

KNOWN EXOTIC SPECIES

The Waterbody Report Card tables are generated from the DRAFT 2014 305(b) report on the status of N.H. waters, and are based on data collected from 2004-2013. Detailed waterbody assessment and report card information can be found at www.des.nh.gov/organizations/divisions/water/wmb/swqa/index.htm

Designated Use	Parameter	Category	Comments
Aquatic Life	Phosphorus (Total)	Good	The calculated median is from 5 or more samples and is < indicator and > 1/2 indicator and the chlorophyll a indicator is okay.
	pH	Slightly Bad	>10% of samples exceed criteria by a small margin (minimum of 2 exceedances).
	Oxygen, Dissolved	Encouraging	There are < 10 samples with 0 exceedances of criteria. More data needed.
	Dissolved oxygen satura	Encouraging	There are < 10 samples with 0 exceedances of criteria. More data needed.
	Chlorophyll-a	Good	The calculated median is from 5 or more samples and is < indicator and > 1/2 indicator.
Primary Contact Recreation	Escherichia coli	No Data	No data for this parameter.
	Chlorophyll-a	Very Good	There are a total of at least 10 samples with 0 exceedances of indicator.

WATERSHED LAND USE SUMMARY

Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011. Completion of the 2006 National Land Cover Database for the Conterminous United States, PERS, Vol. 77(9):858-864. For larger image contact NHDES.
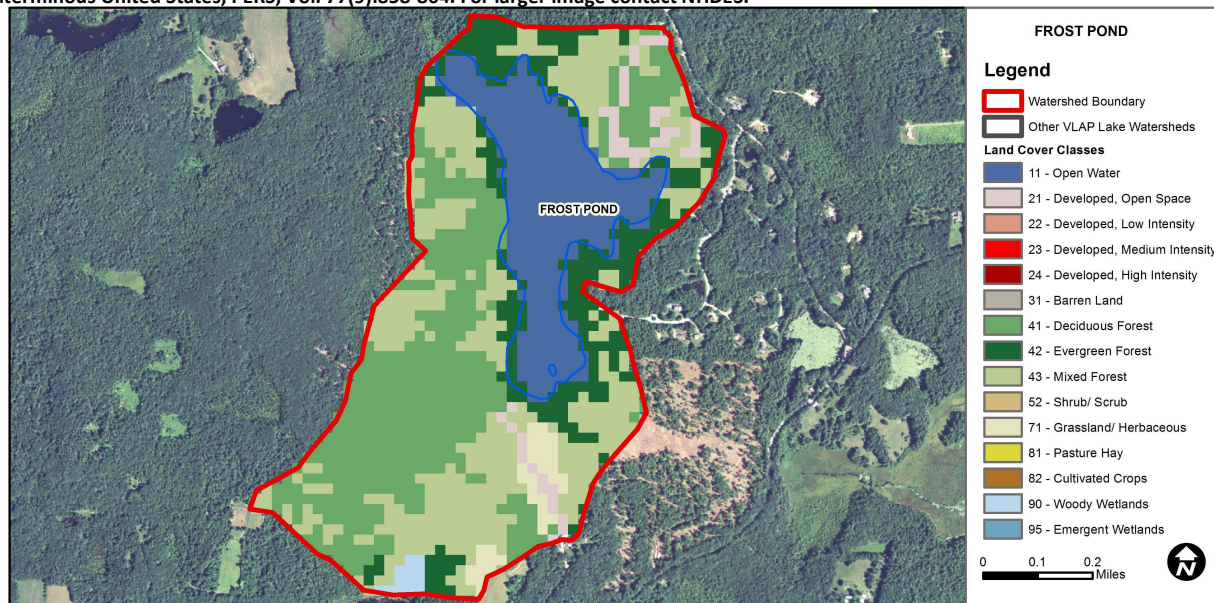
| Land Cover Category	% Cover	Land Cover Category	% Cover	Land Cover Category	% Cover
Open Water	19.0	Barren Land	0	Grassland/Herbaceous	2.54
Developed-Open Space	3.22	Deciduous Forest	29.78	Pasture Hay	0
Developed-Low Intensity	0	Evergreen Forest	15.09	Cultivated Crops	0
Developed-Medium Intensity	0	Mixed Forest	29.71	Woody Wetlands	0.89
Developed-High Intensity	0	Shrub-Scrub	0	Emergent Wetlands	0

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2014 DATA SUMMARY

OBSERVATIONS AND RECOMMENDATIONS (*Refer to Table 1 and Historical Deep Spot Data Graphics*)

◆ **CHLOROPHYLL-A:** Chlorophyll levels were low in August, decreased from 2013 and were less than the state median. Historical trend analysis indicates relatively stable chlorophyll levels with moderate variability between years.

◆ **CONDUCTIVITY/CHLORIDE:** Epilimnetic (deep spot) conductivity levels were low and much less than the state median. Historical trend analysis indicates stable epilimnetic conductivity since 2004.

◆ **TOTAL PHOSPHORUS:** Epilimnetic phosphorus was low and less than the state median. Historical trend analysis indicates stable epilimnetic phosphorus since 2004.

◆ **TRANSPARENCY:** Transparency was good and the Secchi disk was visible on the pond bottom. Historical trend analysis indicates relatively stable transparency with moderate variability between years.

◆ **TURBIDITY:** Epilimnetic turbidity was elevated in August and above average for the pond.

◆ **PH:** Epilimnetic pH was within the desirable range 6.5-8.0 units. Historical trend analysis indicates relatively stable epilimnetic pH since 2004.

◆ **RECOMMENDED ACTIONS:** Overall water quality looks good and trends have remained stable since monitoring began. This is a great sign, however additional monitoring during the summer months may help to better assess seasonal water quality and historical water quality trends. Increase monitoring frequency to once per month during the summer, typically June, July and August, if possible. Keep up the great work!

Dissolved Oxygen & Temp Profile Aug., 2014
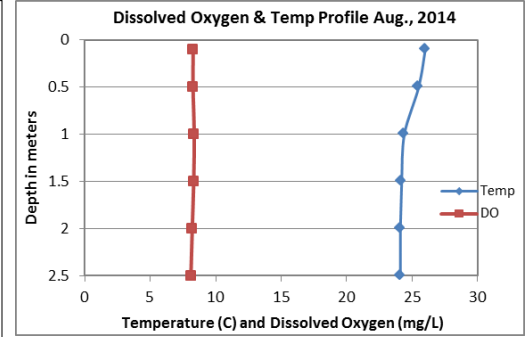
Station Name	Table 1. 2014 Average Water Quality Data for FROST POND							
	Alk. mg/l	Chlor-a ug/l	Cond. uS/cm	Total P ug/l	Trans. m		Turb. ntu	pH
					NVS	VS		
Epilimnion	4.50	3.59	21.55	8	2.80	2.80	1.93	6.70

NH Median Values: Median values for specific parameters generated from historic lake monitoring data.
Alkalinity: 4.9 mg/L
Chlorophyll-a: 4.58 mg/m^3
Conductivity: 40.0 uS/cm
Chloride: 4 mg/L
Total Phosphorus: 12 ug/L
Transparency: 3.2 m
pH: 6.6

NH Water Quality Standards: Numeric criteria for specific parameters. Results exceeding criteria are considered a water quality violation.
Chloride: > 230 mg/L (chronic)
E. coli: > 88 cts/100 mL – public beach
E. coli: > 406 cts/100 mL – surface waters
Turbidity: > 10 NTU above natural level
pH: between 6.5-8.0 (unless naturally occurring)

HISTORICAL WATER QUALITY TREND ANALYSIS

Parameter	Trend	Explanation	Parameter	Trend	Explanation
Conductivity	Stable	Trend not significant; data show low variability.	Chlorophyll-a	Stable	Trend not significant; data moderately variable.
pH (epilimnion)	Stable	Trend not significant; data moderately variable.	Transparency	Stable	Trend not significant; data moderately variable.
			Phosphorus (epilimnion)	Stable	Trend not significant; data show low variability.

Historical Trend Epilimnetic Conductivity and pH

Historical Deep Spot Chlorophyll-a, Epilimnetic Total Phosphorus & Transparency Data

This report was generated by the NH DES Volunteer Lake Assessment Program (VLAP). For more information contact VLAP at (603) 271-2658 or sara.steiner@des.nh.gov